

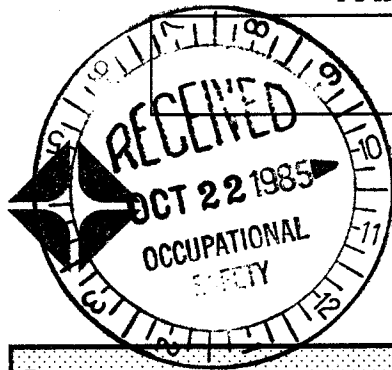
MATERIAL SAFETY DATA SHEET

DPM 386-1

AVIATION GASOLINE-100 OCTANE

MSDS No.
APPC 820

Rev. Date
06/12/85



ARCO PETROLEUM PRODUCTS COMPANY
DIVISION OF ATLANTIC RICHFIELD COMPANY
515 SOUTH FLOWER STREET
LOS ANGELES, CALIFORNIA 90071

IMPORTANT: Read this MSDS before handling and disposing of this product and pass this information on to employees, customers, and users of this product

This product is considered a hazardous substance under the OSHA Hazard Communication Rule.

I. General

Trade Name AVIATION GASOLINE-100 OCTANE		Telephone Numbers EMERGENCY 800/424-9300 CHEMTREC 312/210-3000 COMPANY CUSTOMER SERVICE 213/486-8258 INFO ONLY
Other Names AVGAS-100 OCTANE		
Chemical Family PETROLEUM HYDROCARBONS	DOT Hazardous Materials Proper Shipping Name GASOLINE	
Generic Name PETROLEUM NAPHTHAS (BLENDED)	DOT Hazard Class FLAMMABLE LIQUID	
CAS No. SEE SECTION IX	Company ID No. 1021510215	UN/NA ID No. UN 1203

II. DANGER Summary of Hazards

EXTREMELY FLAMMABLE! OSHA/NFPA CLASS-1A FLAMMABLE LIQUID.
KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME!
MAY CAUSE IRRITATION TO EYES, SKIN, AND RESPIRATORY SYSTEM!
AVOID LIQUID, MIST, AND VAPOR CONTACT. WASH THOROUGHLY AFTER HANDLING.
MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH SKIN!
AVOID BREATHING VAPORS OR MIST. USE ONLY WITH ADEQUATE VENTILATION.
LONG-TERM EXPOSURE TO COMPLETELY VAPORIZED GASOLINE HAS CAUSED CANCER IN LABORATORY ANIMALS. VAPORS OR LIQUID PENETRATION OF SKIN CAN CAUSE CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION AND/OR SYSTEMIC EFFECTS.
HARMFUL OR FATAL IF SWALLOWED! CONTAINS PETROLEUM DISTILLATES!
IF SWALLOWED, DO NOT INDUCE VOMITING SINCE ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA. OBTAIN PROMPT MEDICAL ATTENTION.
KEEP OUT OF REACH OF CHILDREN!

III. Fire and Explosion

Flash Point (Method) AP -50°F (D-56) SEE "FIRE & EXPLOSION HAZARDS"	Autoignition Temperature (Method) AP 825°F (E-659) BASED ON NFPA "AVIATION GASO."	Flammable Limits (% Vol. in Air) At Normal Atmospheric Temperature and Pressure Lower AP 1.3 Upper AP 7.1 BASED ON NFPA "AVIATION GASO."
Fire and Explosion Hazards EXTREMELY FLAMMABLE! THIS MATERIAL RELEASES VAPORS AT OR BELOW AMBIENT TEMPERATURES. WHEN MIXED WITH AIR IN CERTAIN PROPORTIONS AND EXPOSED TO AN IGNITION SOURCE, THESE VAPORS CAN BURN IN THE OPEN OR EXPLODE IN CONFINED SPACES. BEING HEAVIER THAN AIR, FLAMMABLE VAPORS MAY TRAVEL LONG DISTANCES ALONG THE GROUND BEFORE REACHING A POINT OF IGNITION AND FLASHING BACK.		
Extinguishing Media FOAM CO2 DRY CHEMICAL HALON WATER FOG OR SPRAY ARE OF VALUE IN COOLING TANKS AND CONTAINERS BUT MAY NOT ACHIEVE EXTINGUISHMENT.		
Special Firefighting Procedures FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLOSED OR CONFINED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT. THIS MAY INCLUDE SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST THE HAZARDOUS EFFECTS OF COMBUSTION PRODUCTS AND OXYGEN DEFICIENCIES. IF FIREFIGHTERS CANNOT WORK UPWIND TO THE FIRE, RESPIRATORY PROTECTIVE EQUIPMENT MUST BE WORN. COOL TANKS AND CONTAINERS EXPOSED TO FIRE WITH WATER.		

X. Physical and Chemical Data

Boiling Point 70° TO 440° F	Viscosity Units, Temp. (Method) N/AP	Dry Point AP 430° F
Freezing Point N/AP	Vapor Pressure (REID-PSIA AT 100° F) AP 8 TO 15	Volatile Characteristics APPRECIABLE
Specific Gravity (H₂O = 1 at 39.2° F) AP 0.72 TO 0.77	Vapor Sp. Gr. (Air = 1.0 at 60° - 90° F) AP 3.5	Solubility in Water SEE BELOW.
Hazardous Polymerization NOT EXPECTED TO OCCUR	Other Chemical Reactivity N/P	pH N/AP
Stability STABLE		
Other Physical and Chemical Properties WATER IN CONTACT WITH OXYGENATED GASOLINE CAN CONTAIN UP TO 80% OXYGENATE & HYDROCARBON MATERIALS.		
Appearance and Odor	COLORLESS TO STRAW-COLORED LIQUID; PETROLEUM NAPHTHA ODOR.	
Conditions to Avoid	HEAT, SPARKS, AND OPEN FLAME.	
Materials to Avoid	AVOID CONTACT WITH WATER. REACTS WITH STRONG ACIDS AND STRONG OXIDIZING MATERIALS.	
Hazardous Decomposition Products	BURNING OR EXCESSIVE HEATING MAY PRODUCE CARBON MONOXIDE AND OTHER HARMFUL GASES AND VAPORS.	

XI. Additional Precautions

Handling, Storage and Decontamination Procedures	STORE AND TRANSPORT IN ACCORDANCE WITH ALL APPLICABLE LAWS. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME! KEEP CONTAINERS CLOSED AND NOT IN CLOSED VEHICLES. CONTAINERS SHOULD BE ABLE TO WITHSTAND PRESSURES EXPECTED FROM WARMING OR COOLING IN STORAGE. GROUND ALL DRUMS AND TRANSFER VESSELS WHEN HANDLING. THE PRESENCE OF BLENDING COMPOUNDS IN THIS GASOLINE MAY REQUIRE USE OF SPECIAL PROCEDURES AND PROTECTIVE EQUIPMENT FOR TANK, VESSEL, OR OTHER ENCLOSED SPACE ENTRY. REFER TO AMERICAN PETROLEUM INSTITUTE PUBLICATIONS RP 2015 AND 2015A FOR SPECIAL PRECAUTIONS. ALL ELECTRICAL EQUIPMENT IN GASOLINE STORAGE AND/OR HANDLING AREAS SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, N.E.P.A. KEEP OUT OF REACH OF CHILDREN! EMPTY CONTAINERS RETAIN SOME LIQUID/VAPOR RESIDUES; HAZARD PRECAUTIONS MUST BE OBSERVED WHEN HANDLING EMPTIES. USE OF ANY HYDROCARBON FUEL IN SPACES WITHOUT ADEQUATE VENTILATION MAY RESULT IN GENERATION OF HAZARDOUS LEVELS OF VAPOR AND/OR INADEQUATE OXYGEN LEVELS.											
General Comments	<p>FOR USE ONLY AS A MOTOR FUEL. DO NOT USE GASOLINE AS A CLEANING AGENT. SOME ACGIH AND OSHA EXPOSURE LIMITS ARE NOT LISTED IN SECTION VI. BECAUSE THEY ARE LESS RESTRICTIVE THAN THE EXPOSURE LIMITS DISPLAYED. THE TERTIARY-BUTYL ALCOHOL COMPONENT OF THIS PRODUCT HAS PRODUCED URINARY HYPERPLASIA, TESTICULAR DEGENERATION, AND FETAL TOXICITY IN LABORATORY ANIMALS. THE EXACT RELATIONSHIP BETWEEN THESE RESULTS AND POSSIBLE HUMAN EFFECTS IS NOT KNOWN. METHANOL CAN PRODUCE BLINDNESS IN HUMANS. THERE WERE NO BENZENE-INDUCED EFFECTS NOTED IN STUDIES ON LABORATORY ANIMALS AFTER LONG-TERM EXPOSURE TO VAPORS OF AN UNLEADED GASOLINE SAMPLE CONTAINING 2 VOL.% BENZENE, A RECOGNIZED HUMAN CARCINOGEN. HOWEVER, THE RISK OF BENZENE-INDUCED TOXICITY OR CARCINOGENICITY ASSOCIATED WITH THIS PRODUCT IS NOT KNOWN.</p> <p>"PETROLEUM DISTILLATE"--16 CFR 1500.14(B)(3). USE SPECIAL FEDERAL LABELING IF INTENDED, OR PACKAGED, FOR USE IN THE HOUSEHOLD OR BY CHILDREN.</p> <p>SOME OF THE INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE MIXTURE ITSELF.</p>											
<p>- - - Note - - - Qualifications:</p> <table><tr><td>EQ = Equal</td><td>AP = Approximately</td><td>N/P = No Applicable information Found</td></tr><tr><td>LT = Less Than</td><td>UK = Unknown</td><td>N/AP = Not Applicable</td></tr><tr><td>GT = Greater Than</td><td>TR = Trace</td><td>N/DA = No Data Available</td></tr></table>				EQ = Equal	AP = Approximately	N/P = No Applicable information Found	LT = Less Than	UK = Unknown	N/AP = Not Applicable	GT = Greater Than	TR = Trace	N/DA = No Data Available
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Disclaimer of Liability

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS.**

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.**

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

IV. Health Hazards					
Summary of Acute Hazards		LIQUID, MIST OR VAPORS CAN CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION AND CNS DEPRESSION. ASPIRATION INTO LUNGS WILL CAUSE CHEMICAL PNEUMONIA.			
ROUTE OF EXPOSURE		SIGNS AND SYMPTOMS		Primary Route(s)	
Inhalation	EXPOSURE CAN CAUSE IRRITATION TO THE NOSE, THROAT, & LUNGS AND SIGNS OF CNS DEPRESSION (DIZZINESS, DROWSINESS, LOSS OF COORDINATION, COMA AND DEATH), DEPENDING ON THE CONCENTRATION/DURATION OF EXPOSURE. (SEE "SUMMARY" BELOW.)				<input checked="" type="checkbox"/>
Eye Contact	MILD EYE IRRITATION MAY RESULT FROM CONTACT WITH LIQUID, MIST, AND/OR VAPORS.				<input type="checkbox"/>
Skin Absorption	LIQUID CAN PENETRATE SKIN TO CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. VAPOR PENETRATION CAN ALSO CAUSE SYSTEMIC EFFECTS. (SEE "SUMMARY OF CHRONIC HAZARDS AND SPECIAL HEALTH EFFECTS" BELOW.)				<input checked="" type="checkbox"/>
Skin Irritation	SKIN IRRITATION OR MORE SERIOUS DISORDERS MAY OCCUR UPON PROLONGED AND REPEATED CONTACT DUE TO SKIN DEFATTING.				<input checked="" type="checkbox"/>
Ingestion	IRRITATION OF THE MOUTH, THROAT & GASTROINTESTINAL TRACT LEADING TO NAUSEA, VOMITING, DIARRHEA AND RESTLESSNESS. CNS DEPRESSION SIMILAR TO THAT CAUSED BY VAPOR INHALATION. ASPIRATION INTO LUNGS WILL CAUSE CHEMICAL PNEUMONIA.				<input type="checkbox"/>
Summary of Chronic Hazards and Special Health Effects		AN A.P.I.-SPONSORED STUDY HAS SHOWN THAT RATS AND MICE DEVELOPED CANCER FOLLOWING CHRONIC INHALATION EXPOSURE TO THE VAPORS OF UNLEADED GASOLINE. LONG-TERM EXPOSURE TO UNLEADED GASOLINE HAS ALSO PRODUCED KIDNEY DAMAGE IN LABORATORY ANIMALS. THE EXACT RELATIONSHIP BETWEEN THESE RESULTS AND POSSIBLE HUMAN EFFECTS IS NOT KNOWN. LEAD TOXICITY LEADING TO DAMAGE OF THE CENTRAL AND PERIPHERAL NERVOUS SYSTEMS, BLOOD-FORMING ORGANS, AND KIDNEYS MAY RESULT FROM PROLONGED AND REPEATED EXPOSURE TO LIQUID, MIST, OR VAPORS.			
V. Protective Equipment and Other Control Measures					
Respiratory		USE NIOSH/MSHA-APPROVED RESPIRATOR WHEN VAPOR LEVELS EXCEED EXPOSURE LIMITS IN SECTION VI. USE FULL-FACEPIECE MASK ABOVE 600 PPM GASOLINE VAPORS, AND SUPPLIED-AIR OR SCBA EQUIPMENT ABOVE 1000 PPM. (SEE "OTHER" BOX BELOW.)			
Eye		EYE PROTECTION SHOULD BE WORN WHENEVER THERE IS A LIKELIHOOD OF SPLASHING OR SPRAYING LIQUID. CONTACT LENSES SHOULD NOT BE WORN. SUITABLE EYE WASH WATER SHOULD BE AVAILABLE.			
Skin		AVOID PROLONGED AND/OR REPEATED SKIN CONTACT. IF CONDITIONS OR FREQUENCY OF USE MAKE CONTACT SIGNIFICANT, CLEAN AND IMPERVIOUS PROTECTIVE CLOTHING SUCH AS GLOVES, APRON, BOOTS, AND FACIAL PROTECTION SHOULD BE WORN.			
Engineering Controls		USE ADEQUATE VENTILATION TO KEEP VAPOR CONCENTRATIONS OF THIS MATERIAL BELOW THE OCCUPATIONAL EXPOSURE LIMITS SHOWN BELOW IN SECTION VI. (SEE SECTION XI.-"GENERAL COMMENTS".)			
Other Hygienic and Work Practices		USE GOOD PERSONAL HYGIENE PRACTICES. IN CASE OF SKIN CONTACT, WASH WITH MILD SOAP AND WATER OR A WATERLESS HAND CLEANER. IMMEDIATELY REMOVE SOAKED CLOTHING AND WASH THOROUGHLY BEFORE REUSE. DISCARD GASOLINE-SOAKED SHOES. RESPIRATOR USE SHOULD COMPLY WITH OSHA STANDARDS. CONTROL OCCUPATIONAL EXPOSURES BELOW 1 PPM "BENZENE" RATHER THAN THE 300 PPM "GASOLINE" TLV. NEVER SIPHON GASOLINE BY MOUTH. SEE SECTION XI. FOR ADDITIONAL INFORMATION.			
VI. Occupational Exposure Limits					
Substance	Source	Date	Type	Value/Units	Time
BENZENE (ADOPTED BY ATLANTIC RICHFIELD)	ARCOEL	1983	TWA	1 PPM	12 HRS
			PEAK	25 PPM	15 MIN
BENZENE (TYPE "A2" CARCINOGEN)	ACGIH	1985	TLV	10 PPM	8 HRS
			STEL	25 PPM	15 MIN
GASOLINE (SEE SECTION XI.)	ACGIH	1985	TLV	300 PPM	8 HRS
			STEL	500 PPM	15 MIN



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Inhalation	IMMEDIATELY MOVE PERSONNEL TO AREA OF FRESH AIR. FOR RESPIRATORY DISTRESS, GIVE AIR, OXYGEN, OR ADMINISTER CPR (CARDIOPULMONARY RESUSCITATION), IF NECESSARY. OBTAIN MEDICAL ATTENTION IF BREATHING DIFFICULTIES CONTINUE.
Eye Contact	FLUSH WITH CLEAN LOW-PRESSURE WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.
Skin Contact	IMMEDIATELY REMOVE CONTAMINATED CLOTHING. WASH AFFECTED SKIN THOROUGHLY WITH SOAP AND WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE, BUT DISCARD CONTAMINATED LEATHER SHOES/GLOVES.
Ingestion	DO NOT INDUCE VOMITING, SINCE ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA. IF ASPIRATION OCCURS, PROMPTLY OBTAIN MEDICAL ATTENTION.
Emergency Medical Treatment Procedures	SEE ABOVE PROCEDURES. PERSONNEL WITH PRE-EXISTING SKIN DISORDERS, IMPAIRED LIVER OR KIDNEY FUNCTION, OR CENTRAL NERVOUS SYSTEM AND CHRONIC RESPIRATORY DISEASES SHOULD AVOID EXPOSURE TO THIS MATERIAL.

VIII. Spill and Disposal

Precautions if Material is Spilled or Released	CONTAIN SPILL. REMOVE ALL IGNITION SOURCES AND SAFELY STOP FLOW OF SPILL. IN URBAN AREAS, CLEANUP AS SOON AS POSSIBLE; IN NATURAL ENVIRONMENTS, SEEK ADVICE FROM ECOLOGISTS. EVACUATE ALL NON-ESSENTIAL PERSONNEL. USE PROPER PROTECTIVE EQUIPMENT. BLANKET WITH FOAM OR USE WATER FOG TO DISPERSE VAPORS. PADS AND ABSORBANT MATERIAL CAN BE USED. GASOLINE WILL FLOAT ON WATER AND RESULTING RUNOFF MAY CREATE AN EXPLOSION OR FIRE HAZARD. COMPLY WITH ALL APPLICABLE LAWS. SPILLS MAY NEED TO BE REPORTED TO THE NATIONAL RESPONSE CENTER (800/424-8802). GASOLINE OR CONTAMINATED MATERIALS MAY BE HAZARDOUS TO HUMAN AND OTHER LIFE.
Waste Disposal Methods	MAXIMIZE PRODUCT RECOVERY FOR REUSE. DISPOSE OF PRODUCT, CONTAMINATED MATERIAL, AND STORAGE TANK WATER BOTTOMS AS AN EPA "IGNITABLE HAZARDOUS WASTE" (D001), UNLESS PROVEN OTHERWISE. EPA ALSO LISTS REFINERY LEADED TANK BOTTOMS AS A "HAZARDOUS WASTE" (K052). USE APPROVED TREATMENT, TRANSPORTERS, AND DISPOSAL SITES IN COMPLIANCE WITH ALL LAWS. TANK WATER BOTTOMS/SLUDGE MAY BE HAZARDOUS TO HUMAN AND OTHER LIFE. IF SPILL ENTERS A WASTEWATER SYSTEM, THE CHEMICAL AND BIOLOGICAL OXYGEN DEMAND WILL LIKELY INCREASE. SPILL MATERIAL IS BIODEGRADABLE IF GRADUALLY EXPOSED TO MICROORGANISMS. A POTENTIAL DISPOSAL METHOD IS INCINERATION.

IX. Components (This may not be a complete list of components)

Component Name	CAS No.	Carcinogen##		Composition amount (Vol.) (See Qualification on Page 4)	
HYDROCARBONS WITH A BOILING POINT RANGE OF 70° TO 335° F.		N/AP	AP	89 TO	99 PERCENT
BENZENE	71-43-2	1,2, ,4	LT	5 PERCENT	
LEAD ALKYL (MEASURED AS LEAD)		N/AP	LT	2.1 GM/GAL.	

##Listed By: 1 = NTP, 2 = IARC, 3 = OSHA, 4 = Other

Compositions given are typical values, not specifications.